

SEQUENCE LISTING

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Tsuchiya, Masayuki

<120> Methods for enhancing antibody activity

<130> 14875-164US1

<150> PCT/JP2004/018493

<151> 2004-12-10

<150> JP 2003-415760

<151> 2003-12-12

<160> 28

<170> PatentIn version 3.1

<210> 1

<211> 1924

<212> DNA

<213> Macaca fascicularis

<220>

<221> CDS

<222> (11)..(1918)

<223>

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Gln	Phe	Pro	Ala	Gln	Glu	Glu	Val	Arg	Leu	Phe	Ser	Pro	Leu	His	Leu	
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Trp	Val	Lys	Asn	Val	Phe	Leu	Asn	Gln	Thr	Gln	Ile	Gln	Arg	Val	Leu	
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Lys	Asp	Leu	Lys	Asn	Ser	Thr	Gly	Pro	Thr	Val	Ile	Gln	Leu	Ile	Ala	
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 Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
 560 565 570

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 Ser Ser Glu Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ser Gln Met
 575 580 585

gac tac cga aga ttg cag cct tct tgc ctg ggg acc atg ccc ctg tct 1825
 Asp Tyr Arg Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser
 590 595 600 605

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 Val Cys Pro Pro Met Ala Glu Ser Gly Ser Cys Cys Thr Thr His Ile
 610 615 620

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 35 40 45

Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly Thr Tyr Gln
 50 55 60

Leu Leu Tyr Ala Tyr Pro Gly Glu Lys Pro Arg Ala Cys Pro Leu Ser
 65 70 75 80

Ser Gln Ser Val Pro Arg Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro
 85 90 95

Ala Gln Glu Glu Val Arg Leu Phe Ser Pro Leu His Leu Trp Val Lys
 100 105 110

Asn Val Phe Leu Asn Gln Thr Gln Ile Gln Arg Val Leu Phe Val Asp
 115 120 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly
 130 135 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Ala Pro Ala Pro Glu

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Ile Ser Asp Phe	Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Lys Asp Leu					
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Lys Asn Ser Thr	Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr					
	180			185		190
Cys Cys Pro Ala	Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln					
	195			200		205
Ser Pro Cys Ala	Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln					
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Thr Ser Pro Thr	Arg Glu Ala Ser Ala Leu Thr Ala Val Gly Gly Ser					
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Cys Leu Ile Ser	Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu					
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Arg Ser Glu Pro	Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp					
	260			265		270
Ser Leu Pro Val	Thr Val Asp Leu Pro Gly Asp Ala Val Ala Ile Gly					
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Leu Gln Cys Phe	Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln					
	290			295		300
Gln Glu Asp His	Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala					
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Arg Cys Cys Pro	Arg Asp Arg Tyr Pro Ile Trp Glu Asp Cys Glu Glu					
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Glu Glu Lys Thr	Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys					
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His Phe Lys Ser	Arg Asn Asp Ser Val Ile His Ile Leu Val Glu Val					
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Thr Thr Ala Leu	Gly Ala Val His Ser Tyr Leu Gly Ser Pro Phe Trp					
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Ile His Gln Ala	Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu					
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Ile Ser Ser Gly	His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp					
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Ala Ala Gln Glu	Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His					
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Gln Asp Trp Lys	Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr					
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Leu Glu Leu Arg	Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg					

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Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp Ser Asp Pro				
465		470		480
Ala Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr				
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Ala Leu Leu Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu				
	500		505	510
Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu				
	515		520	525
Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg				
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Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys				
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Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu				
	565		570	575
Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ser Gln Met Asp Tyr Arg				
	580		585	590
Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser Val Cys Pro				
	595		600	605
Pro Met Ala Glu Ser Gly Ser Cys Cys Thr Thr His Ile Ala Asn His				
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<400> 3
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<210> 4
 <211> 23
 <212> DNA
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<220>
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<400> 4
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23

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 <211> 411
 <212> DNA
 <213> Mus musculus

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 gtc cac tcc cag gtt cag ctg cag cag tct gga cct gag ctg gtg aag 96
 Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys
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 cct ggg gcc tca gtg aag att tcc tgc aag gct tct ggc tat gca ttc 144
 Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe
 35 40 45
 act aac tcc tgg atg aac tgg gtg aag cag agg cct gga aag ggt ctt 192
 Thr Asn Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu
 50 55 60
 gag tgg att gga cgg att tat cct gga gat gga gaa act atc tac aat 240
 Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn
 65 70 75 80
 ggg aaa ttc agg gtc aag gcc aca ctg act gca gac aaa tcc tcc agc 288
 Gly Lys Phe Arg Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 85 90 95
 aca gcc tac atg gat atc agc agc ctg aca tct gag gac tct gcg gtc 336
 Thr Ala Tyr Met Asp Ile Ser Ser Leu Thr Ser Glu Asp Ser Ala Val
 100 105 110
 tac ttc tgt gca aga ggc tat gat gat tac tcg ttt gct tac tgg ggc 384
 Tyr Phe Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly
 115 120 125
 caa ggg act ctg gtc act gtc tct gca 411
 Gln Gly Thr Leu Val Thr Val Ser Ala
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 <213> Mus musculus

<400> 6
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Pro	Gly	Ala	Ser	Val	Lys	Ile	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ala	Phe
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Thr	Asn	Ser	Trp	Met	Asn	Trp	Val	Lys	Gln	Arg	Pro	Gly	Lys	Gly	Leu
	50					55					60				
Glu	Trp	Ile	Gly	Arg	Ile	Tyr	Pro	Gly	Asp	Gly	Glu	Thr	Ile	Tyr	Asn
65					70					75					80
Gly	Lys	Phe	Arg	Val	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser
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Thr	Ala	Tyr	Met	Asp	Ile	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val
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Tyr	Phe	Cys	Ala	Arg	Gly	Tyr	Asp	Asp	Tyr	Ser	Phe	Ala	Tyr	Trp	Gly
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gga gcc att ggg gat att gtg atg act cag gct gca ccc tct ata cct		96
Gly Ala Ile Gly Asp Ile Val Met Thr Gln Ala Ala Pro Ser Ile Pro		
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gtc act cct gga gag tca gta tcc atc tcc tgt agg tct agt aag agt		144
Val Thr Pro Gly Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser		
	35	40 45
ctc ctg cat agt aat ggc aac act tac ttg tat tgg ttc ctg cag agg		192
Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg		
	50	55 60
cca ggc cag tct cct caa ctc ctg ata tat cgg atg tcc aac ctt gcc		240
Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala		
65	70	75 80
tca gga gtc cca gat agg ttc agt ggc agt ggg tca gga act gct ttc		288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe		
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 Thr Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
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tgt atg caa cat ata gaa tat cct ttt acg ttc gga tcg ggg acc aag 384
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 Leu Glu Ile Lys
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Val Thr Pro Gly Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser
 35 40 45

Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg
 50 55 60

Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala
 65 70 75 80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe
 85 90 95

Thr Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
 100 105 110

Cys Met Gln His Ile Glu Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys
 115 120 125

Leu Glu Ile Lys
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<210> 9
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 <212> DNA
 <213> Artificial

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 <212> DNA
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 <212> DNA
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 <212> DNA
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gtccactccc aggttcagct gcagc 85

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<220>
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<220>
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 35 40 45
 Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Asn Asn Asn Gly Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
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 35 40 45
 Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Asn Asn Asn Gly Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Thr Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
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Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Ser
20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe
50 55 60

Arg Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Asp Ile Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ala
115

<210> 22

<211> 115

<212> PRT

<213> Mus musculus

<400> 22

Gln Val Gln Leu Gln Gln Pro Gly Thr Glu Leu Val Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Trp Val Asn Trp Val Lys Gln Arg Pro Gly Arg Gly Leu Glu Trp Ile
35 40 45

Gly Arg Ile His Pro Tyr Asp Ser Glu Thr His Tyr Asn Gln Lys Phe
50 55 60

Lys Asn Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Ile Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Ser Gly Gly Trp Phe Ala Ser Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ala
115

<210> 23
 <211> 116
 <212> PRT
 <213> Mus musculus

<400> 23
 Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp
 20 25 30
 Tyr Ala Trp Ser Trp Ile Arg Gln Leu Pro Gly Asn Lys Leu Glu Trp
 35 40 45
 Met Gly Tyr Ile Thr Tyr Ser Gly Tyr Ser Ile Tyr Asn Pro Ser Leu
 50 55 60
 Lys Ser Arg Ile Ser Ile Ser Arg Asp Thr Ser Lys Asn Gln Leu Phe
 65 70 75 80
 Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys
 85 90 95
 Val Gly Gly Tyr Asp Asn Met Asp Tyr Trp Gly Gln Gly Thr Ser Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 24
 <211> 112
 <212> PRT
 <213> Mus musculus

<400> 24
 Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly
 1 5 10 15
 Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Ala Ala Phe Thr Leu Arg Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
 85 90 95
 Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 25
 <211> 112
 <212> PRT
 <213> Mus musculus

<400> 25
 Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly
 1 5 10 15
 Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Ala Ala Phe Thr Leu Arg Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
 85 90 95
 Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 26
 <211> 112
 <212> PRT
 <213> Mus musculus

<400> 26
 Asp Ile Val Met Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly
 1 5 10 15
 Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
 85 90 95
 Ile Glu Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 27
 <211> 112
 <212> PRT

<213> Mus musculus

<400> 27

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly
1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Tyr Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Thr Ile
65 70 75 80

Ser Ser Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 28

<211> 108

<212> PRT

<213> Mus musculus

<400> 28

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Leu Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Ser
20 25 30

His Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Asn Met Glu
65 70 75 80

Thr Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro
85 90 95

Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105